-- As summarized above, polynucleotide sensors of the invention are designed and constructed independently or together to comprise the actuator domain and receptor domain in communication with the bridging domain such that binding of a ligand to the receptor domain and/or a signal triggers a conformational change in the bridging domain which positively and/or negatively modulates the activity of the actuator domain. Where enzyme polynucleotides are employed, the reaction rate may be enhanced or inhibited by reversible binding to small effector molecules such metal ions and/or compounds having a molecular weight of less than about 300. The effector molecule or effect binds to or affects a site that is spatially distinct from that of the enzyme or reporter domain, and rapidly interconvert from an "off" state to an "on" state, or vice versa, or intermediate states between "off" and "on", reversibly, via the bridging domain on a time scale that is relevant for their use as biosensors (*i.e.*, in preferably less than 60 minutes, even more preferably in less than 6 minutes, and in most cases in less than 1 minute, *e.g.*, within seconds). Since they are responsive to ligands and/or signals, multidomain polynucleotides of the invention have a variety of uses, particularly as sensing elements in clinical, industrial, agricultural, and environmental analyses, and as genetic control or report elements for gene expression. --

A1

Please add the attached ABSTRACT OF THE DISCLOSURE as page 55.

In the claims:

clean Copy

Please amend claims 10, 12, 19 and 20 as follows:

A2

10. AMENDED A biosensor comprising a polynucleotide according to claim 1.

A3

12. AMENDED A method for detecting the presence or absence of a ligand or its concentration in a sample comprising contacting the sample with a polynucleotide according to claim 1.

A4

19. AMENDED A process for preparing RNA sensors according to claim 15.

20. AMENDED A process for preparing RNA sensors according to claim 15.